NEW JAPANESE FUNGI

NOTES AND TRANSLATIONS—X

Tyôzaburô Tanaka

Hypodermopsis Theae K. Hara sp. nov. in Chagyôkai (Tea Journal) 14[7]: 13–14. T. 8, vii, July, 1919. (Japanese.)

Caulicolous, spots orbicular or irregular, large, light reddish-brown; perithecia superficial, scattered or gregarious, flat, orbicular, elliptical or oblong, simply elongated or slightly curved, black or lacquer-black, later lacerate from the middle giving a somewhat hoary appearance, usually veiled with epidermal tissue of the host, 400–700 μ broad, 130–150 μ high, length irregular, wall black, parenchymatous, 40–50 μ thick; asci clavate, oblong-ovoid or short-cylindrical, rounded at the apex, pedicellate at the base, 50–66 x 20–23 μ, paraphysate, octosporous; paraphyses filiform, not forked, equal to or slightly longer than the asci, 1–1.5 μ across; ascospores oblong-ovoid, oblong or pyriform, both ends rounded, multinucleate, 4–6-septate, hyaline, 18–23 x 6–7.5 μ.

Parasitic on the trunks and branches of *Thea sinensis*.

Type localities: Shidzuoka-ken Hamana-gun Hikuma-mura, Nov. 12, 1918 (K. Hara); Shidzuoka-ken Abe-gun Chiyoda-mura, Dec. 6, 1918. (K. Hara.)

Spots occur on the woody part of the tea-plant as light reddish-brown, round or irregular patches at least 5 cm. in diameter. Such spots increase their size in various directions, often running together in large irregular patches entirely surrounding the branches. Black perithecial bodies appear on the diseased spots as scattered or crowded minute dots of 0.5 mm. to 1.0 mm. across. The infected branches die out in a short time.

The Japanese name of the disease: Chaju no Kasshoku Azabyô. (Brown spot of the tea-plant.)

Illustrations: One half-tone plate showing the diseased spot, cross-section of a perithecium, asci (with a paraphysis) and ascospores. (Figs. 1, 5, 6 and 8.)

STAGNOSPORA THEAE K. Hara sp. nov. in Chagyôkai (Tea Journal) 14[7]: 14–15. T. 8, vii, July, 1919. (Japanese.)

Pycnidia scattered, globose or depressed-globose, 100–150 μ in diam., wall parenchymatous, composed of dark brown polygonal cells 4–8 μ in diam.; ostiola even or warty, opening round, 15–20 μ across; pycnospores elongate-cylindrical or sub-clavate, both ends rounded, 6–11-septate, hyaline, 18–35 x 4–5 μ; pedicels of pycnospores short, arising from the base of pycnidial chamber, 4–6 x 2–2.5 μ.

Saprophytic on the trunks of *Thea sinensis.*

Type locality: Shidzuoka-ken Iwara-gun Ejiri-chô, Nov. 24, 1918. (K. Hara.)

Illustrations: One half-tone plate showing diseased spots, section of a pycnidium, pycnospores and pedicels (Figs. 13–16).

LEPTOSPHAERIA HOTTAI K. Hara sp. nov. in Chagyôkai (Tea Journal) 14[9]: 14–15. T. 8, ix, Sept., 1919. (Japanese.)

Leptosphaeria Hottai K. Hara nom. subnud. in Byôchû-gai Zasshi (Journal Plant Prot.) 6[4]: 37. T. 8, iv, April, 1918. (Japanese.)

Spots orbicular or irregular, large, brown, with greasy luster, later darker with minutely crowded dots of perithecia; perithecia superficial, nearly always covered by epidermis, globose or depressed-globose, 350–500 μ in diameter, wall carbonaceous, black, thick, especially so at the place touching the host epidermis so as to show more or less clipeus-form, ostiolate at the apex; opening of ostiola round, 30–45 μ across; asci clavate or cylindric, apex round, base short pedicellate, 60–70 x 8–10 μ, paraphysate, octosporous; paraphyses filiform, considerably longer than the asci, usually simple, hyaline, 1–1.5 μ across; ascospores biseriate or obliquely tri-seriate, ellipsoid, oblong-ovoid or fusoid, at first unicellular and 4-nucleate, later 3-septate with one-sided middle septum, constricted, flavescent, 12–18 x 4.5–5.5 μ.

Parasitic on the trunks of *Thea sinensis.*

Type localities: Ejiri, Hikuma, Mitsuke and Takabe in Shidzuoka Prefecture.

The shape and size of the ascospores resemble *Leptosphaeria Coniothyrium* forma *Theae,* but the shape of the perithecia differ greatly from this species, so a different name is given.

Japanese name: Kuroazabyô (black spot disease).

This disease was at first discovered by Masazô Hotta at Aratama district, Inasa-gun, Shidzuoka-ken, and reported in the Annual Report of Shidzuoka-ken Agricultural Experiment Station (for the fiscal year T. 5, 1916). Hara in the Byôchû-gai Zasshi states that the disease is serious in the vicinity of Hamamatsu and also occurs in the Mie Prefecture.

Illustration: One half-tone text figure showing asci, paraphyses and ascospores. (Fig. 6.)

SILLIA THEAE K. Hara sp. nov. in Chagyôkai (Tea Journal) 14[9]: 15–16. T. 8, ix, Sept., 1919. (Japanese.)

Stromata scattered or gregarious, at first immersed, later erumpent, pillow-shaped or wart-like, sometimes confluent, afterwards with rounded margin adhering to substratum, 0.8–5 mm. in diam., surface orange-yellow or dirty-yellow, rugose with black perithecial spots, inside orange-yellow, somewhat membranaceous in structure, with imbedded perithecia; perithecia globose or ovoid, dark-colored, 300–350 x 180–300 μ, wall carbonaceous or parenchymatous, dark-colored; ostiola terminal, forming wart-like protrusions on the surface of stroma, opening one, round, 80–100 μ across; asci cylindrical or clavate, apex rounded or somewhat mamelon-shaped, base tapering to pedicel, 150–170 x 20–25 μ, paraphysate, octosporous; paraphyses filiform, forked, longer than or equal to the asci, 1–1.5 μ across; ascospores biseriate or irregularly tri-seriate, fusoid, cylindrical or clavate, rounded at both ends, straight, bent or curved, or more or less lunate, with numerous biseriate oil globules, giving the appearance of a septum, 6–11-septate, constricted or straight, hyaline, 35–44 x 8–9 μ, germinating at both ends.

Parasitic on trunks and branches of *Thea sinensis*.

Type locality: Shidzuoka-ken Hamana-gun Hikuma-mura, November 11, 1918. (K. Hara.)

The affected area first appears on one side of branches or trunks as a spot of dark pink or gray color, and by increasing its size it entirely surrounds the bark, simultaneously spreading upwards and downwards. The stroma then makes its appearance as dirty-yellow or in some rare instances pinkish-yellow spots, raised from the diseased surface like warts or a pillow-shaped elevation or sometimes a button-shaped swelling of 0.8–8 mm. in diameter. Perithecial bodies are formed on the stromata as elevated or flat

black spots round in shape. Such spots are solitary or run together to form warts of irregular outline. The dying out of the diseased portion is rather slow, occurring two or three years after the infection. The surrounding area of stromata often develops a greenish color which looks attractive in comparison with pink stromatic bodies.

Suggestions for control: (1) Diseased branches should be removed and destroyed by fire; (2) infected areas on trunks should be peeled off and disinfected with grafting wax or a similar substance; (3) to prevent the disease the woody part of the tree should be washed with Bordeaux mixture.

Japanese name of the disease: Chaju no Samehada-byô (Shark-skin disease of the tea-plant).

Illustration (Fig. 7, on p. 16): One half-tone text figure showing asci, paraphyses and ascospores (one germinating).

ASCOCHYTA THEAE K. Hara sp. nov. in Chagyôkai (Tea Journal) 14^{10}: 13–14. T. 8, x, October, 1919. (Japanese.)

Pycnidia punctiform, globose or depressed-globose, 80–120 μ, wall membranaceous, consisting of dark-brown carbonaceous polygonal cells 5–10 μ in diam.; ostiola apical, even or papillate, opening simple, 10–12 μ across; pycnospores ellipsoid, cylindric or subovoid, both ends rounded or truncate, uniseptate, dividing into homogenous or slightly unequal locules, provided with a large oil globule in each locule, not constricted at the septum, hyaline, 7–10 x 3.5–4.5 μ.

Parasitic on the leaves of *Thea sinensis*.

Type locality: Shidzuoka-ken Abe-gun Okawa-mura, October 24, 1918. (K. Hara.)

Found occurring on tea leaves infected by *Exobasidium reticulatum*.

Illustration: One half-tone text figure showing pycnospores. (Fig. 8, on p. 14.)

VALSA THEAE K. Hara sp. nov. in Chagyôkai (Tea Journal) 14^{11}: 15–16. T. 8, xi, November, 1919. (Japanese.)

Stromata scattered, at first immersed, later erumpent, black, punctiform to the naked eye, conical, apex projecting, black, typically Valsa-like; perithecia annular, 5–10 or more on one stroma,

globose or depressed-globose, 200–350 μ broad, 130–170 μ high, wall fungoid-parenchymatous, black, 12–15 μ in thickness; ostiola separate but grouped, elongate, 30–300 μ long; asci clavate or cylindrical, rounded at the apex, narrowed into pedicel at the base, 25–30 x 4–5 μ, aparaphysate, octosporous; ascospores distichous or irregularly distichous, cylindrical, rounded or truncate at both ends, usually curved in one direction, rarely straight, hyaline or flavescent, 5–10 x 1.5–2 μ.

Parasitic on weakened trunk of *Thea sinensis*.

Type locality: Shidzuoka-ken Hamana-gun Hikuma-mura, December 12, 1918. (K. Hara.)

Illustration: One half-tone text figure showing cross-section of a stroma with perithecia, asci and ascospores. (Fig. 9.)

Notes: There are two species of Valsa found on the tea-plant, but it is still undetermined which causes the die-back of the trunk. The other species not described here has no stroma, though it resembles this species in other respects. The latter is left unnamed until its characters are more fully studied.

DIATRYPE THEAE K. Hara sp. nov. in Chagyôkai (Tea Journal) 14^{11}: 19. T. 8, xi, November, 1919. (Japanese.)

Stromata subepidermal, later erumpent, oblong or linear, 1–2 mm. long, 0.5–1 mm. wide, cross-section oblate-urceolate, slightly rounded at the upper part, flat or somewhat concave at the base, with a broad neck at the top, cinereous, more or less parenchymatous; perithecia deeply immersed in the stroma, globose or ovoid, 300–330 μ high, 100–170 μ in diam., wall parenchymatous, dark colored, 15–30 μ thick, long ostiolate; ostiola penetrating the stromatic neck, opening round, 20–25 μ across; asci clavate or obovoid, apex usually narrowed, rarely swollen and rounded, base tapering very much into a filiform pedicel, 20–40 x 6–8 μ, aparaphysate, octosporous; ascospores cylindrical or fusoid, rounded at both ends, straight or curved, plane or nucleate at both ends, hyaline or flavescent, 7–11 x 2–2.5 μ.

Saprophytic on the trunks of *Thea sinensis*.

Type locality: Shidzuoka-ken Abe-gun Ókawa-mura, October 24, 1918. (K. Hara.)

Differs from *Diatrype stigma* (Hoffm.) Fr. in the shape of the stromata, also from *D. Hochelagae* E. & E. in the aparaphysate asci. The former is found in the same village where the present species was discovered.

Illustration: One half-tone text figure showing infected trunk, cross-section of a stroma, asci and ascospores (Fig. 12).

HENDERSONIA THEAE K. Hara sp. nov. Chagyôkai (Tea Journal) 14^{12}: 22–23. T. 8, December, 1919. (Japanese.)

Pycnidia globose or depressed-globose, 60–130 μ in diam., immersed, later slightly erumpent, pycnidial wall parenchymatous, composed of angular cells of 4–7 μ in diam., apically ostiolate; ostiola papillate or warty, with opening 11–15 μ across; pycnospores broad-ellipsoid or broad-fusoid, broadest near the middle, narrowed toward both ends, at first hyaline, finally changing to yellowish-brown, 3-septate, somewhat constricted, 7–10 x 4–5 μ.

Parasitic on the leaves of *Thea sinensis*.

Type locality: Shidzuoka-ken Abe-gun Okawa-mura, October 24, 1918. (K. Hara.)

Foliicolous, appearing mostly at the leaf tips, on spots that increase their area downward by degrees toward the leaf base with definite but undulating border lines. The infected area is at first dark brown, but later it changes color, becoming gray, and minute spottings of fungus bodies appear somewhat sparsely on the surface. The lower surface of the diseased area is light brown in color.

Illustration: One half-tone text figure showing an infected leaf, a section of a pycnidium and pycnospores. (Fig. 13, nos. 1, 2, 3.)

Since March, 1919, Kanesuke Hara has been publishing in Chagyôkai (Tea Journal) a series of papers dealing with the diseases of the tea-plant, in which he describes a number of new species of fungi. The translations given here and in the last number of New Japanese Fungi (Mycologia 12^{6}: 330–332) cover nearly all of those published in 1919; the rest of his new species will be given in the subsequent numbers of this series.

BUREAU OF PLANT INDUSTRY,
WASHINGTON, D. C.